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AUTO-INTOXICATION

By

CLARENCE T. GARDNER, M. D.

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CLARENCE T. GARDNER, M. D.,

OF PROVIDENCE.

(READ BY WALTER L. MUNRO, M. D.)

[In presenting this, the last scientific paper written by the late Dr. Gardner, it seems appropriate to say a word concerning its preparation and the successful issue of the stratagem necessary to secure its preservation.

Dr. Clarence T. Gardner began practice in Providence in 1866 and joined the Rhode Island Medical Society the same year.

From the first he took an active interest in its proceedings and was elected Secretary in 1869, continuing in office until 1871.

He contributed a number of valuable papers and frequently took part in the discussions.

Later, as his practice became heavy and his professional engagements very exacting, he ceased to attend the meetings but remained a member in good standing, beside contributing generously year by year to the support of the Library, up to his death.

For the last ten or twelve years he was actively affiliated with the Friday Night Medical Club, never missing a meeting when in town and contributing a series of practical papers, easy in diction, virile and enriched by the fruits of practical experience. It is safe to say that no papers presented were more closely followed or awakened a more active discussion.

Personally he undervalued his work in this line and evinced a singular unwillingness to have the papers preserved. It was his habit to tear them up before leaving the meeting. Repeated attempts were made by the members to rescue some of them. On one occasion he allowed one of our number to take a paper home after the meeting, but sent his man to the doctor's office in the morning with instructions to stay there until he got the manuscript.

The present paper was read before the Club just five weeks before his death. It was begun while in Virginia about a year ago, but was written, for the most part, at the Ponce de Leon, St. Augustine, Florida, during the winter, its preparation, as he told us, affording him a pleasing relief from the ennui and boredom of the hotel piazza.

It brought out a full discussion in which all took part. After the adjournment an excuse was made to borrow it for the night. Somewhat to our surprise he allowed it to leave his hands.

Early the next morning he telephoned, saying that he must have it by such an hour. Anticipating this very request, it had already been placed in the hands of the typewriter. The manuscript was returned to him on time and was at once destroyed; but the copy remained to the lasting satisfaction of his family and friends.]

Many and varied are the diseases which are indebted to auto-toxemia for their origin, but so alluring to the physician and so satisfactory to the layman has the germ theory of the origin of disease become that it has annihilated every initiative seeking the causation of disease from any other source.

Although our knowledge of the subject is at present crude and comparatively limited, and we are as yet more or less uncertain of that little, yet intestinal self-poisoning is sufficiently well understood to enable us to formulate the proper treatment for its successful management and relief.

The human body is a receptacle and laboratory of poisons, and every moment of his life man is exposed to the danger of being overpowered by poisons which have generated in his own economy. That man is standing constantly on the brink of the precipice of self-poisoning, which is the very threshold of disease, is being daily demonstrated.

Self-poisoning from the alimentary canal is the most prolific source of mental and nervous diseases, as is being proved by the successful treatment of such cases based on this theory. Many a neurasthenic, who had thought it of no consequence to die, but considered it frightful to live, owes it to this theory that he is again clothed in his right mind and sees life and its pleasures with the eyes of his normal fellow-beings.

Who ever saw a neurasthenic who did not have oxaluria, which is due to faulty metabolism, and who ever saw one that did not have his doubts as to whether he had not passed over the borderland to the country of the insane.

It is now generally believed that the hyperemesis of pregnancy, which has been treated empirically by the internal administration and local application of almost every conceivable drug, is really due to auto-toxemia, and the most successful treatment is that by the appropriate remedies for this condition. Pathological research has demonstrated that the fatalities in this form of the trouble present the same findings as in acute yellow atrophy of the liver.

Puerperal Eclampsia, too, hitherto supposed to be of nephritic origin, is now conceded to be the result of auto-toxemia, the nephritis following the convulsion, rather than preceding it, and being due to the blood being overburdened with poison which the kidney is trying to eliminate after the same manner as seen in all the infectious diseases.

Many forms of anemia and chlorosis are undoubtedly due to chronic auto-intestinal poisoning; and these are the cases which led Sir Andrew Clarke to declare that if he was limited to the choice of one drug in the treatment of chlorosis he would choose a saline purgative. He might have declared further, without fear of contradiction, that it is a most serviceable agent in the treatment of all diseases. The older writers referred at some length to fecal anemia, which they controlled by eliminative treatment. Broussais was the promulgator of the theory that all diseases originate from the gastro-intestinal canal, and when he died he left as a legacy a ponderous volume containing all he had learned in the practice of medicine. On examination all the pages were blank, with one exception, and that contained only the following lines:

"To maintain your health, keep your head cool, your feet warm and your bowels open."

No doubt the best intestinal antiseptic is a saline purgative, but it should be remembered that the purgative habit, like all other habits, is an evil one.

I wonder will the next generation think us as wise as our forefathers, when they scan the literature of to-day, to study that of a generation ago. I imagine our germ theory will by that time have ceased to be popular.

I remember hearing within a year a prominent instructor at Harvard College announce the belief that within a short period the practice of medicine would resolve itself into a co-partnership between the pathologist and physician, the former to distinguish the character of the germ, and the latter to administer hypodermically, the proper antitoxine. It would interest me very much to know if he still entertains the same ideas.

The literature of the past seems to indicate that our forefathers appreciated and had a better understanding of the importance of auto-toxemia than we of to-day.

The old ideas of blood letting, sweating and spring cleaning, were therapeutic methods based upon the theory of self-poisoning.

When I was a boy I can remember, and perhaps some of you may have had the same experience (although as far as I know I was in perfect health), I was compelled every morning before breakfast to take a dose of cream of tartar, sulphur and molasses to get rid of the humors.

Most all proprietary medicines, before the advent of the coal tar derivatives, had some purgative for an active principle, thereby accomplishing a dual purpose.

First. Most people were satisfied if they had a movement of the bowel every day, and

Second. Such a preparation demonstrated a physiological action which anyone could plainly understand.

One of the greatest luxuries of life is a good, free, gentle, but satisfactory movement of the bowel every day, after breakfast, while perusing your favorite morning paper and noting the gains of your investments. So potent an influence does this act have on one's well being that even Voltaire went into rhapsodies about it, and Lord Byron is the author of the saying that "Nothing cheers the spirits like a good dose of salts." He was a sufferer from intestinal poisoning, and 't'was this caused his melancholy moods, and 'tis said his own verses made him so melancholic while writing "Child Harold," that he was tempted to, and probably would have blown his brains out only for the thought that his death would afford so much pleasure to his mother-in-law.

It is the general view that faulty metabolism induces the acidosis that is the underlying cause of gastro-intestinal toxemia. In normal metabolic conditions a number of acid products of the disassimilation of proteids, fats and carbohydrates are formed as intermediate, that either undergo further degradation, or that cannot be oxydized further and are consequently excreted. Of these carbonic acid leaves the body in large quantities through the respiratory apparatus, while sulphuric acid, phosphoric acid, hydrochloric acid, uric acid and others are eliminated, with alkalies in combination, through the kidney and urinary channel. Free acid, as such, never appears in the urine. A withdrawal of all alkali would cause speedy death from sulphuric acid poisoning. Man has an almost unlimited power of manufacturing ammonia salts in his blood and secretions generally, were it not for which death would always be due to hyperacidosis.

I presume that interference with the elimination of acid products alone never produces the clinical picture of acid-intoxication, but insufficient elimination combined with overproduction may. The acids of the most important possibilities in the production of auto-intoxication are oxybuty-

ric acid, diacetic acid, and acetone. Recent investigations have demonstrated the close relationship of these three substances and the ready transition of one into the other, according to the degree of oxidation.

The deleterious effects of the three (as seen in uremia, diabetic coma, etc.) upon the nerve centers, as a matter of fact, is not due to any specific toxic property of either one, as such, but to the power each one possesses as an acid, of withdrawing alkali from the organism.

Those especial perversions of metabolism resulting in the excessive production of any of these acids constitute the chief danger of diabetics and complicate at times other diseases more or less seriously. When to this perversion is added one of the toxic auto-toxemias, such as that of morphine, or ether, or chloroform, then the self-poisoning is more manifest and the symptoms are more urgent.

With most surgeons it has become a routine practice to endeavor to obtain a free movement of the bowel at the earliest possible moment after all major operations and all cases requiring anesthetics, knowing from experience that well-doing only begins when this great desideratum has been obtained. Those few who claim it is unnecessary to hurry this event are neglecting one of the most important of measures to overcome the toxic and auto-toxic post-operative distresses.

The surgeon of the future will feel compelled to devote more attention to preparing his patient in all cases, so far as time will permit, by getting rid of his auto-intoxication before adding to it a toxic one in the way of an anesthetic. The physician too, who hopes to treat successfully chronic diseases, must, like our predecessors, keep a close and intelligent watch upon the digestion, excretion and assimilation of his patients, and discard the idea that all illness is caused by a germ of some description which can only be killed by a gun loaded with the proper shot.

So varied and manifold are the symptoms of auto-intoxication that any attempt on my part to enumerate them appears a hopeless task.

They may be divided into the acute and chronic, the physical, and the neurotic or psychical. With all these varieties we are more or less familiar, though the chronic form is the one with which we have most to deal.

The acute form may be ushered in by a chill, with abdom-

inal pains, by vertigo and dizziness, by profuse sweating and urination, by headaches, languor and lassitude, cold or livid extremities and a flushed countenance with an undescribable feeling of malaise and there may be nausea, or diarrhœa, or both, with flatulence and the putrescent odors of sulphuretted-hydrogen gas. There is also a profound desire for sleep, but a complete inability to obtain it. These malodorous discharges, together with an increase of indican in the urine, are pathognomonic indices of intestinal putrefaction. In health the feces should be odorless, and the amount of phosphates and indican should be very small.

In the chronic poisoning all these symptoms may obtain, more or less modified, but it is here that the nervous system seems to suffer most, and it is in this form that we find the mental symptoms, such as hysteria, hypochondria, sexual and general neurasthenia, and various forms of neuritis and neuralgia and insanity. This list might be prolonged indefinitely to dyspeptic asthma, anemia and chlorosis, gout and rheumatism, tonsillitis and bronchitis and catarrhal troubles of the mucus membranes and skin, except those of parasitic origin. All these diseases furnish a rapidly accumulating evidence that they owe their origin to, or are greatly influenced by, intestinal putrefaction.

As to the cause of intestinal auto-toxemia, it would seem that imprudence in eating is the first or prime cause and that a resulting faulty metabolism is the immediate cause.

It has been truthfully said that man as a rule digs his own grave with his knife and fork, and that there is no beast of burden so overloaded as the human stomach.

What and how much to eat, how and when to eat are the problems that present themselves for our first consideration, as they are the chief factors in producing auto-toxemias.

Fortunate indeed is the patient whose advice comes from a physician with a normal alimentary tract, as it is only human nature for a doctor to believe his own stomach and intestine model ones, and, as a consequence, he is constantly advising against good, sensible and nutritious foods for the sole reason that they do not agree with *him*.

Man has been said to be as old as his arteries, but who can see why he is no older than every tissue of his body, if, by means of proper exercise, fresh air and an appropriate diet, he can prevent the harmful germs of the intestinal tract from gaining access to the blood, thereby sparing the energy

of the beneficent germs, so useful for the promotion of nutrition and the delay of the advent of old age.

Previous to the Russo-Japanese war our state-prisons furnished a good idea of the amount of food required for the preservation of health and strength; but it remained for the Japanese soldier to demonstrate to the world the amount of strength and endurance that could be obtained from his diet of dried fish and rice.

It would be an interesting comparison, if, for every mouthful we eat or drink at our ordinary meals, we could place on a separate plate an equivalent of what we have eaten or drunk.

That we eat improperly and too much, that we do not sufficiently masticate our food, and that business affairs are permitted to intrude upon our thoughts, which should be wholly centred on the digestive processes, and that we chill our stomachs with ices and cold water, when the temperature favorable for digestion should be 99° or thereabouts cannot be gainsaid, but in these facts may be found many of the factors which constitute the congeries of auto-infection.

The treatment of auto-intoxication customarily consists of means which are only of temporary benefit; the chief remedies comprise the evacuants and neutralizers of the poisons of the gastro-intestinal canal. So far as my experience goes antiseptics are more a theoretical conception than a clinical reality. This is probably due to the fact that auto-intoxication is more often a result of the development of toxic bodies from abnormal digestion rather than from the action of saprophitic bacteria resident in the alimentary canal. Discretion in diet, while most essential in the treatment of this affection, is by no means radical.

Where dilatation or ptosis of the stomach is present, daily washing by means of the stomach-tube is imperatively indicated. For ages purgatives have been the usual remedies for this affection, which has usually been known as biliousness, but great good judgment is required in their use, as, if employed to excess, they injure, mechanically, the intestine by removal of the epithelium and mucous coat, thereby creating new ports of entry for the poisons, and, by producing a venous congestion of the bowel, concentrating therein poisons which have already been absorbed.

Of all the purgatives sodium phosphate would seem to be the most desirable and effectual on account of its alkalinity

and its well known action in draining the portal and intestinal veins.

Aloes, colocynth, podophyllin and cascara are agents frequently employed, but in my opinion are all too drastic, and, besides, their action is chiefly on the lower bowel, whereas the trouble under consideration arises, in the majority of cases, in the small intestine.

For the very rare cases due to rectal and colonic impaction high enemata and flushing of the bowel are to be preferred to purgatives. Calomel is empirically regarded as one of our best remedies and seems to work admirably in the majority of cases. It should be given in small and frequently repeated doses, which are to be followed by a saline laxative, except in cases where vomiting is a prominent symptom, when I believe a single large dose will be found more effectual. It acts not only by unloading the bowel, but by its action on the liver and other important glands tends to eliminate (and I believe also to destroy) all toxic substances.

In the way of antiseptics, formic acid, in two to five drop doses repeated several times daily, has been highly recommended. The sulpho-carbolate of bismuth, soda and zinc, carbolic acid, and crude petroleum all have their advocates.

The fruit acids, like apple, orange, and others are natural antiseptics for the alimentary canal. I have found oil of cinnamon, in two to five drops at a dose gradually increased, one of the very best of intestinal antiseptics, and most satisfactory to the patient from its apparent simplicity.

Nitro-glycerine, either alone or in combination with atropine, may be of great use in hastening elimination from congested areas.

In urgent cases nitrite of amyl by inhalation will sometimes act more promptly than a sub-cut of morphine, and without the subsequent pernicious effects.

General bleeding and leeches to the arms, although now classed among the lost arts, are remedies of no mean value.

Abdominal and general massage and abdominal supports are of great benefit, especially in cases of pendulous abdomen and ptosis of the abdominal viscera.

Strychnia, which seems to be the popular drug of to-day, and in doses by no means homeopathic, has probably been prescribed promiscuously in this affection more frequently than any other one drug; but I believe that its effect can only

be pernicious, from the fact that it increases the arterial tension which is so constantly present in auto-intoxication.

The treatment of the several forms of auto-intoxication, as typically witnessed in Bright's disease and diabetes, resolves itself into the free use of the eliminative treatment already mentioned, and the equally free administration of alkalies by every known method, per oram, per rectum, hypodermically and intravenously. Good results have been reported from the two latter methods, which were, however, only temporary in their duration, as this form of self-poisoning is the last scene of all that ends this strange eventful history.

[With these pathetic words the strong and self-reliant man, the capable and experienced physician, who had so many times brought hope and healing to others, laid down his pen. We, who knew him, can imagine him calmly recognizing as his own the very doom of which he had been writing, and acknowledging without a murmur the impotence and futility of any human aid.

WALTER L. MUNROE, M. D.]





